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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/773,649
Filing Date: February 06, 2004
Appellant(s): COON ET AL.

Tony Coon
Lan Tan
Peter Henscheid
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 3, 2008 appealing from the Office action mailed June 23, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner:

- The objection to claims 1, 2, 11, 12, 15-22, 29 and 31-42 under 35 U.S.C. 132(a) as introducing new matter.

- The rejection of claims 11-20 and 31-40 under 35 U.S.C. 101 as being directed towards nonstatutory subject matter.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,115,393	Engel et al.	9-2000
6,247,091	Lovett	6-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett (Lovett hereinafter).

Examiner interprets “state variable information” and “parameters” in light of the applicant’s specification to describe the condition of the protocol stack at a particular instant in time. This information can be indicated by one or more of a protocol identifier, an address, or a port number. The protocol identifier indicating what type of protocol was used to establish the network connection. Examiner further interprets “protocol engine" to be the means that implements a protocol stack.

Regarding claims 1, 11, 21, 31, and 41, Engel discloses **a method for characterizing a network connection comprising: receiving parameters that specify a network connection** (Col. 2, lines 21-31; Engel discloses monitoring communications which occur in a network of nodes, each communication being effected

by a transmission of one or more packets among two or more communicating nodes which are detected passively and in real time, communication information associated with multiple protocols is derived from the packet contents. Col. 11, lines 38-52; **); conveying to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack** (Col. 8, lines 35-37, 45-65; Engel discloses a protocol data unit (PDU) to processes protocol stack, i.e. protocol engine, that includes addressing information. Engel discloses variable information from the PDU, i.e. protocol engine, that corresponds to the port or connection.**); receiving state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters** (Col. 2, lines 32-41; Engel discloses information about the states of dialogs, i.e. state variable information, occurring in the network is derived from the packet contents.**); sensing when the network connection is initiated according to the received state variable information** (Col. 2, lines 42-45; Engel discloses a current state is maintained for each dialog, and the current state, i.e. state variable information, is updated in response to the detected contents of transmitted packets.**); and storing the state variable information** (Col. 2, lines 45-47; Engel discloses for each dialog, a history of events is maintained, i.e. stored, based on information, i.e. state variable information, derived from the contents of packets**).** Although Engel clearly teaches the functionality of a "protocol engine," Engel doesn't explicitly use the term "protocol engine" Lovett teaches "**a protocol engine**" (Lovett, fig. 5; col. 5, lines 35 - 60).

Engel and Lovett are analogous art because they are from the same field of endeavor of network communications. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Lovett's protocol engine with/as part of Engel's network monitoring system. The suggestion/motivation would have been to have more efficient communication between nodes of a multimode multiprocessor network communication system (Lovett; col. 2, lines 54-61).

Regarding claims 2, 12, 22, 32, and 42, Engel-Lovett discloses the invention substantially as described in claims 1, 11, 21, 31, and 41 above including, **conveying to the protocol engine at least one of the parameters comprises conveying to the protocol engine** (Col. 8, lines 45-65; Engel discloses variable information from the PDU, i.e. protocol engine, that corresponds to the port or connection.) **at least one of a protocol identifier, a source address, a source port, a destination address and a destination port** (Col. 8, lines 35-37, 45-55; Engel discloses a protocol data unit (PDU) to processes protocol stack, i.e. protocol engine, that includes addressing information.).

Regarding claims 3, 13, 23, 33, and 43, Engel-Lovett discloses the invention substantially as described in claims 2, 12, 22, 32, and 42 above including, **wherein sensing when the network connection is initiated comprises monitoring the value of a state variable indicative of the connection state of the connection** (Col. 22, lines 58-64; Engel discloses a network monitor that monitors the state of the connection based on state information received from both ends of the connection.).

Regarding claims 4, 14, 24, 34, and 44, Engel-Lovett discloses the invention substantially as described in claims 3, 13, 23, 33, and 43 above including, **wherein**

sensing when the network connection is initiated comprises monitoring the value of a TCP/IP state variable called "STATE" (Col. 22, lines 3-5; Engel discloses the state to which the node is changed is specified by the S="STATE" entry.)**.**

Regarding claims 5, 15, 25, 35, and 45, Engel-Lovett discloses the invention substantially as described in claims 4, 14, 24, 34, and 44 above including, **sensing when the network connection terminates according to the state variable information** (Col. 11, lines 38-52; Engel discloses a network monitor with a state machine that tracks variable connection states and events, i.e. state variable information. The monitor retrieves this information whether the connection is active or inactive, i.e. the connection terminates.)**; retrieving stored state variable information according to the network connection after the network connection terminates** (Col. 11, lines 38-52; Engel discloses a network monitor with a state machine that tracks variable connection states and events, i.e. state variable information. The monitor retrieves this information whether the connection is active or inactive, i.e. the connection terminates.)**; and creating a history of the network connection according to the state variable information** (Col. 22, line 65-Col. 23, line 12; Engel discloses there is a history data structure which the state machine uses to remember the current state of the connection, the state of each of the nodes participating in the connection and a short history of state related information.)**.**

Regarding claims 6, 16, 26, 36, and 46, Engel-Lovett discloses the invention substantially as described in claims 5, 15, 25, 35, and 45 above including, **developing a network connection profile from the state variable information** (Col. 22, line 65-Col.

23, line 12; Engel discloses there is a history data structure which the state machine uses to remember the current state of the connection, the state of each of the nodes participating in the connection and a short history of state related information, i.e. network connection profile.)**; and creating a history of the network connection profile** (Col. 22, line 65-Col. 23, line 12; Engel discloses there is a history data structure which the state machine uses to remember the current state of the connection, the state of each of the nodes participating in the connection and a short history of state related information, i.e. network connection profile. Fig. 8 and 9 illustrate a network connection profile.)**.**

Regarding claims 7, 17, 27, 37, and 47, Engel-Lovett discloses the invention substantially as described in claims 6, 16, 26, 36, and 46 above including, **wherein creating a history of the network connection profile comprises detecting an exceptional event** (Col. 24, lines 15-25; Engel discloses the network monitor keeps useful statistics about the connection including any "inconsistencies" or "UNKNOWN" state, i.e. exceptional events, which have occurred over the connection)**.**

Regarding claims 8, 18, 28, 38, and 48, Engel-Lovett discloses the invention substantially as described in claims 7, 17, 27, 37, and 47 above including, **analyzing the exceptional event** (Col. 24, lines 15-25; Engel discloses the network monitor keeps useful statistics about the connection including any "inconsistencies" or "UNKNOWN" state, i.e. exceptional events, which have occurred over the connection. Col. 24, lines 21-29; Engel discloses how the network monitor analyzes "inconsistencies" and "UNKNOWN" states.)**.**

Regarding claims 9, 19, 29, 39, and 49, Engel-Lovett discloses the invention substantially as described in claims 8, 18, 28, 38, and 48 above including, **retrieving the state variable information while the network connection continues** (Col. 11, lines 38-52; Engel discloses a network monitor with a state machine that tracks variable connection states and events, i.e. state variable information. The monitor retrieves this information whether the connection is active or inactive, i.e. while the network continues.)**; and making the state variable information available on a periodic basis** (Col. 12, lines 57-62; Engel discloses a network monitor with an event manager that calculates time averages and performs periodic updates of the monitor's variables.)**.**

Regarding claims 10, 20, 30, 40, and 50, Engel-Lovett discloses the invention substantially as described in claims 9, 19, 29, 39, and 49 above including, **wherein making state variable information available comprises: creating a dynamic profile of the network connection according to the state variable information** (Col. 13, lines 30-32; Engel discloses a network monitor with an address tracking module that keeps track of the node name to node address bindings on networks which implement dynamic node addressing protocols, i.e. creates a dynamic profile of the network connection according to state variable information.)**; and making the dynamic profile available on a periodic basis** (Col. 12, lines 57-62; Engel discloses a network monitor with an event manager that calculates time averages and performs periodic updates of the monitor's variables.)**.**

(10) Response to Argument

The examiner summarizes the various points raised by the appellant and addresses replies individually.

As per appellant's argument that:

(1) Regarding the rejection of claims 1-50 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett, appellant argues that Engel-Lovett does not teach conveying any of the received parameters to a protocol engine which implements a protocol stack. Appellant further argues that Engel-Lovett does not teach or disclose receiving state variable information from the protocol engine pertaining to the network connection and received parameters.

In reply to argument (1), examiner asserts Engel-Lovett clearly teaches conveying any of the received parameters to a protocol engine which implements a protocol stack. Engel teaches *"The relevant protocol stack defines the structure of each packet that is sent over the network (Engel, col. 8, lines 32-33)."* Examiner interprets the protocol stack that defines the structure of each packet to be functionally equivalent to the protocol engine of the claimed invention. Engel further teaches, *"In general, each level of the protocol stack takes the data from the next higher level and adds header information to form a protocol data unit (PDU) which it passes to the next lower level. That is, as the data from the application is passed down through the protocol layers in preparation for transmission over the network, each layer adds its own information to the data passed down from above until the complete packet is assembled (Engel, col.*

8,lines 35-42)." Examiner asserts that the aforementioned function of the protocol data unit (PDU) conveys the data information from one level of the protocol stack to the next higher level by including header information. Furthermore, Engel explicitly describes the data included in the protocol data unit to include a destination address, source address, protocol type, sequence number, destination port, source port, etc. (Engel, col. 8, lines 45-48, 50-67). Examiner interprets this data to be received parameters conveyed to a protocol engine. Lovett is relied upon to teach the terminology of a "protocol engine" (Lovett, fig. 5; col. 5, lines 35 - 60).

Engel-Lovett clearly teaches receiving state variable information from the protocol engine pertaining to the network connection and received parameters. Engel clearly teaches receiving state variable information from the protocol engine pertaining to the network connection and received parameters. Engel teaches a state machine responsible for tracking state as appropriate protocols and connections, i.e. state variable information (Engel, col. 11, lines 38-39). This state machine is responsible for maintaining and updating connection oriented statistical elements and tracking connection states and events, i.e. more state variable information (Engel, col. 11, lines 38-43). Engel teaches a state machine which uses a routine to determine the state of a connection based on past observed frames and keeps track of sequence numbers (Engel, col. 11, lines 38-52). The state machine receives parameters that specify a connection. Examiner interprets these parameters to be the sequence numbers and past observed frames. The sequence numbers are part of the received parameters

(Engel, col. 8, lines 60-66) conveyed from the protocol stack implemented protocol data unit (PDU), i.e. protocol engine (Engel, col. 11, lines 43-45).

(2) Regarding the rejection of claims 1-50 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett, appellant argues that Engel-Lovett does not teach where the state variable information can be used to sense when the network connection is initiated.

In reply to argument (2), examiner asserts Engel-Lovett clearly teaches where the state variable information can be used to sense when the network connection is initiated. Engel teaches a state machine which uses a routine to determine the state of a connection based on past observed frames and keeps track of sequence numbers (Engel, col. 11, lines 38-52). The state machine receives parameters that specify a connection (sequence numbers and past observed frames). The state machine uses this routine to determine "if a connection is in data transfer state and if a retransmission has occurred," i.e. a retransmission has occurred, i.e. a network connection is initiated.

(3) Regarding the rejection of claims 1-50 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett, appellant argues that a person of ordinary skill in the art would have found no reason to combine the teachings of Engel and Lovett to achieve the claimed invention.

In reply to argument (3), examiner asserts to provide Engel's network monitoring system having a protocol data unit implementing a protocol stack with a protocol engine providing state information, node information, and transmission information of a network would have been obvious to one of ordinary skill in the art, in view of the teachings of Lovett, since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change to their respective function, and the combination would have yielded nothing more than predictable results to one of ordinary skill in the art at the time of the invention.

(4) Regarding the rejection of claims 1-50 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett, specifically regarding claims 2, 22, 32 and 42, appellant argues that Engel-Lovett does not teach conveying to the protocol engine at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

In reply to argument (4), examiner asserts Engel-Lovett clearly teaches the at least the following parameters at the protocol data unit (PDU), i.e. protocol engine to processes protocol stack: destination address (DEST ADDR), a source address (SRC ADDR), and a destination port (DEST PORT) (Engel, Col. 8, lines 35-37, 45-67). Furthermore, examiner asserts Engel-Lovett clearly teaches conveying any of the received parameters to a protocol engine which implements a protocol stack. Engel teaches *"The relevant protocol stack defines the structure of each packet that is sent*

over the network (Engel, col. 8, lines 32-33)." Examiner interprets the protocol stack that defines the structure of each packet to be functionally equivalent to the protocol engine of the claimed invention. Engel further teaches, *"In general, each level of the protocol stack takes the data from the next higher level and adds header information to form a protocol data unit (PDU) which it passes to the next lower level. That is, as the data from the application is passed down through the protocol layers in preparation for transmission over the network, each layer adds its own information to the data passed down from above until the complete packet is assembled (Engel, col. 8,lines 35-42)."* Examiner asserts that the aforementioned function of the protocol data unit (PDU) conveys the data information from one level of the protocol stack to the next higher level by including header information. Furthermore, Engel explicitly describes the data included in the protocol data unit to include a destination address, source address, and protocol type (Engel, col. 8, lines 45-48). Examiner interprets this data to be received parameters conveyed to a protocol engine. Lovett is relied upon to teach the terminology of a "protocol engine" (Lovett, fig. 5; col. 5, lines 35 - 60).

(5) Regarding the rejection of claims 1-50 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,115,393 to Engel et al (Engel hereinafter) in view of US Patent 6,247,091 to Lovett, specifically regarding claims 15-18, appellant argues that Engel-Lovett does not teach any off-line elements.

In reply to argument (5), examiner asserts Engel-Lovett clearly teaches **an off-line command register to receive an off-line analysis request that includes a**

connection specifier (Col. 11, lines 38-52; Engel discloses a network monitor with a state machine that tracks variable connection states and events, i.e. state variable information or connection specifiers. The monitor retrieves this information whether the connection is active or inactive, i.e. the connection terminates, i.e. the connection is off-line)**; an off-line computer readable medium controller to retrieve state variables from a computer readable medium according to the connection specifier** (Col. 11, lines 38-52; Engel discloses a network monitor with a state machine that tracks variable connection states and events, i.e. state variable information or connection specifier. The monitor retrieves this information whether the connection is active or inactive, i.e. the connection terminates, i.e. the connection is off-line)**; a format table to convert the state variables into a print stream** (Col. 22, line 65-Col. 23, line 12; Engel discloses there is a history data structure which the state machine uses to remember the current state of the connection, the state of each of the nodes participating in the connection and a short history of state related information. Col. 28, lines 45-60; Engel discloses a summary tool that displays network operation status with statistical information at each node. Although Engel does not explicitly state that this data can be printed out, I would have been obvious to print any displayed network information given that the invention is connected to workstations, printers, etc see col. 1, lines 47-65.)**; an off-line analysis controller to cause the second computer readable medium controller to retrieve state variables and further to direct the retrieved state variables to the format table** (Col. 22, line 65-Col. 23, line 12; Engel discloses there is a history data structure which the state machine uses to remember the current state of the connection, the state

of each of the nodes participating in the connection and a short history of state related information.).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Tariq S. Najee-ullah

/TN/

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